OAH No. 12-6224-15350-3

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR CARVER COUNTY

In the Matter of the Appeal of Robert and Julie Rocheleau of a Decision of Carver County Environmental Services	**FINDINGS OF FACT, CONCLUSIONS, AND RECOMMENDATION**

This matter was heard by Administrative Law Judge Steve M. Mihalchick, appointed as hearing examiner pursuant to Carver County ISTS Ordinance No. 21F, on April 7, 8, and 21, 2003, at the Office of Administrative Hearings, 100 Washington Square, Suite 1700, Minneapolis, MN 55401-2138. The Administrative Law Judge participated in a site visit on April 16, 2003. The parties submitted post-hearing briefs and letters and the hearing record closed on May 28, 2003.

Jon Erik Kingstad, Attorney at Law, 7650 Currell Boulevard, Suite 300-M, Woodbury, MN 55125, appeared for Appellants Robert and Julie Rocheleau (Appellants or the Rocheleaus) and Intervenor Headwaters Rural Utility Association (HRUA).

Robert Hendricks, Assistant Carver County Attorney, 604 East Fourth Street, Chaska, MN 55318-2102, appeared for Carver County Environmental Services (CCES).

NOTICE

This Report is a recommendation, **not** a final decision. Pursuant to Carver County Ordinance No. 21F, § 13.03 D., the Carver County Board will make the final decision after reviewing this Report and the hearing record. The County Board may adopt, modify, or reject this Report. The parties should contact the County Administrator, Administration Building, 602 East 4th Street, Chaska, Minnesota 55318, 952-361-1510, to ascertain the procedure for filing exceptions to this Report and submitting argument to the County Board.

STATEMENT OF ISSUES

Whether redoximorphic features 42 inches below the surface of the ground at the site of the Rocheleaus' septic system demonstrate the presence of seasonally saturated soil at that level at the site. The Administrative Law Judge finds that they do.

Whether the Rocheleaus' septic system is "failing" under Carver County Ordinance No. 21F, Section VIII, and Minn. R. 7080.0060, subp. 3 B. 2. because the bottom of the system is less than two feet above the level of seasonally saturated soil at the site. The Administrative Law Judge concludes that it is.

Whether the depth of the seasonally saturated soil at the site is sufficient to allow a shallow trench system (bottom at 12 inches or less) to be installed at the site. The Administrative Law Judge concludes that it does not.

Based on all of the proceedings herein, the Administrative Law Judge makes the following:

FINDINGS OF FACT

Regulatory Background

1. Carver County has adopted an Individual Sewage Treatment System (ISTS) Ordinance, Ordinance No. 21F (the ISTS Ordinance), pursuant to Minn. Stat. §§ 115.55 and 115.56, and Minn. Stat. Ch. 145A. The ISTS Ordinance incorporates by reference all of Minn. R. Ch. 7080, the Minnesota Pollution Control Agency's ISTS Program Rules, except as amended in the ISTS Ordinance.[1] None of PCA rules relevant here were amended in the ISTS Ordinance. The County's ISTS Program is administered by CCES.[2]

2. The ISTS Ordinance regulates the design, location, installation, inspection, use, monitoring and maintenance of the County's ISTSs to prevent adverse health and safety effects to the public and the environment from the discharge of inadequately treated sewage.[3] Private dwellings must have a compliant ISTS if they are not hooked up to a municipal system.[4]

3. In a typical ISTS, sewage flows to a tank where solids dissolve or settle out. Liquid from the tank flows or is pumped into a distribution medium, often perforated pipes arranged in a "drainfield," which distributes it into the surrounding soil. The microbes in the soil treat the sewage. Several requirements apply to ISTSs. The one at issue here is the amount of soil that must exist below the distribution medium—the "vertical separation" requirement. There must be an adequate amount of unsaturated soil or sand below the system to insure adequate treatment of the sewage. Otherwise, inadequately treated sewage can reach the saturated soil and move to the waters of the state. Under the rules, "vertical separation" is the vertical measurement of unsaturated soil or sand between the bottom of the system's distribution medium and saturated soil or bedrock.[5]

4. Very generally speaking, below the surface of the earth is an "unsaturated zone" of relatively dry soil and below that is a "saturated zone" where all the pores in the rock are filled with water. The saturated zone contains saturated soil and other material. The top of the saturated zone is the "ground water table." The ground water may be located in aquifers between impervious or semi pervious strata of materials. Ground water may also appear in the unsaturated zone, for a number of reasons. For example, a small, bowl-like stratum of impervious material in the unsaturated zone can catch precipitation draining from the surface in a pool on top of that material, creating a "perched water table," in a very small area. Perched water tables may appear only seasonally, such as in the spring, when there is normally more precipitation. The depth

to the saturated zone changes as well, sometimes seasonally, as the water in it is recharged by precipitation and removed by wells, plant usage, and other causes.[6]

5. Measuring vertical separation requires determining the depth of the seasonally high water table or “saturated soil”[7] and comparing it to the depth of the bottom of the existing system or the system being designed. The term “saturated soil” does not mean soil that is constantly wet. It is defined by the rules to include the highest soil that contains significant water on a seasonal or intermittent basis. Minn. R. 7080.0020, subp. 29a, states:

> “Saturated soil” means the highest elevation in the soil that is in a reduced chemical state because of soil voids being filled with water. Saturated soil is evidenced by the presence of redoximorphic features or other information.

Minn. R. 7080.0020, subp. 28e, states:

> "Redoximorphic features" means features formed in saturated soil by the process of reduction, translocation, and oxidation of iron and manganese compounds, or other soil, landscape or vegetative indicators. They are described in part 7080.0110, subpart 4, item D, subitem (5). This is commonly known as "mottling."[8]

6. Redoximorphic features, or “redox,” are color and texture changes that occur when water remains in soil for a significant period of time. During that time, oxygen is depleted from the soil and the microbes living in the soil search for oxygen in nitrates, iron and manganese compounds. These compounds change color when the microbes strip them of their oxygen and they become mobile in the standing water. When the water in the area ultimately drains, varying concentrations of the compounds are distributed throughout the soil and the reoccurrence of oxygen creates variances in color. Variances in color are a visual indicator of redoximorphic features; light spots indicate soil in a reduced state, while dark spots tend to show oxidized soil.[9]

7. Redoximorphic features may be active or relict. Active features indicate the current presence of seasonally saturated soil. Relict, or ancient, redoximorphic features were created by seasonally saturated soil at a level that has subsequently been lowered by geologic or climatic changes, human activities, or other causes.[10]

8. It is possible for “false mottling” to occur where color variances in the soil are due to the presence of calcium carbonates as opposed to a reduced environment caused by water in the soil. A “weak acid” test may be used to determine if mottling is caused by calcium carbonate.[11]

9. The “other information” Minn. R. 7080.0020, subp. 29a, allows to be considered as evidence of saturated soil includes such information as the nature, content, permeability, classification, and slope of the soil determined by observation, examination, and testing, and from reference materials. It also includes information as

to the hydrology of the area determined from reference information, water level measurements, and other observations and testing.[12]

10. Minn. R. 7080.0110 describes the information an ISTS designer must gather. He or she must observe the soil in a pit or by boring or probing and evaluate it as to the depth, matrix, and mottled color of each soil horizon; its texture and consistency using the USDA Soil Survey Manual soil classification system; the depth to the bedrock or to the seasonally saturated soil; the depth of any standing water; and any other soil characteristic that may need to be described to properly design a system. The ISTS designer must also perform percolation tests.

11. Systems built before April 1, 1996, in non-SWF[13] areas, must have at least two feet of vertical separation between the bottom of the system's distribution medium and saturated soil or bedrock. Systems built after March 31, 1996, or in an SWF area must have three feet of vertical separation.[14] An existing ISTS is classified as "failing" if it lacks the vertical separation required.[15]

12. An existing ISTS is classified as an "imminent threat to public health or safety" (IPHT) if it creates a situation "with the potential to immediately and adversely affect or threaten public health or safety." Such situations include discharging sewage to the ground surface or surface water, and sewage backing up into a dwelling or other establishment. Discharging to a draintile, which is specifically prohibited, is also considered an IPHT according to the PCA Compliance Inspection Form.[16] Since agricultural draintiles typically discharge to ground surfaces or drainage ditches that flow to surface waters, discharging to them is equivalent to discharging to the ground surface or surface water.

The Rocheleau Property, Septic System, Inspections, and Tests

13. The Rocheleau property is located at 17860 102nd St., Norwood-Young America, Minnesota. It is in Section 29 of Camden Township (T 116, R 26) in Carver County, an area of agricultural fields, farmsteads, and wooded areas. 102nd St. runs along the south line of the section. The southern part of the Rocheleau property is on the north side of 102nd St. in the east half of the west half of the southeast quarter of Section 29. Thus, that part is about 610 feet wide. It extends back 300 to 400 feet from the road and has the Rocheleaus' home (an old farmhouse), other buildings, and the ISTS on it. The Rocheleau property also includes a narrow strip of land perhaps 100 feet wide extending north from the east side of the southern part some 2000 feet, where it widens to the west and continues north to the quarter line. The Rocheleaus purchased the property in 1991. They operate a hobby farm and grow hay and alfalfa on the property.[17]

14. Smith Lake is located approximately 600 feet west of the southern part of the Rocheleau property. It is generally oval-shaped and about 800 feet from north to south and 1300 feet from east to west. 102nd St. curves to go around the north side of it.[18] Several agricultural draintiles exist in the area, some of which drain to or toward Smith Lake.[19]

15. The Rocheleaus' septic system consists of a 1000-gallon "Belle Plaine" concrete tank at the northwest corner of the house. The tank is connected by about 15 feet of four-inch solid PVC pipe to a draintile running along the southern edge of the Rocheleaus property and, until recently, across the agricultural field to the west of the property. The agricultural draintile is assumed by all the witnesses to have been constructed in the mid-1900s. It was constructed of concrete tiles that are one-foot long, six-inch diameter, concrete pipes. They were laid loosely end-to-end, about one-eighth of an inch apart, in a straight line that extends straight west to an outfall on the bank of Smith Lake. There is no evidence in the record as to whether the draintile extends east of the point where the PVC pipe was connected, although there is a reference in one report to it originally running from basement floor drain.[20] The age of the tank and PVC pipe are not in evidence.[21]

16. Depending upon conditions, the loose joints allow sewage from the septic tank to seep into the surrounding soil, but sewage occasionally flowed from the outfall.[22] When the ground is wet, the loose joints allow water to seep into the line and for the line to function as a the agricultural draintile it was intended to be.

17. On May 17, 2001, CCES employees Mary West[23] and Scott Weinzierl visited Appellants' property to investigate a complaint that the Rocheleaus' septic system ran into a field tile line that discharged into Smith Lake. They found the discharge point near the lake and observed effluent coming out of it. The Rocheleaus were not at home at the time to provide any information on the system.[24]

18. The next day, CCES sent the Rocheleaus a letter requesting that the Rocheleaus provide information about the type and location of the septic system.[25] Mr. Rocheleau hired Jim Wickenhauser to inspect the system, which he did on December 5, 2001. Wickenhauser submitted a Compliance Inspection Form dated December 15, 2001, to the Rocheleaus and CCES. He found only the septic tank and no drainfield. Wickenhauser made no mention of the draintile that ran toward Smith Lake or the PVC pipe connecting the septic tank to it. He noted that the septic tank depth was such that any drainfield would be down 48 inches and that he found mottling at 42 inches. He classified the system as an imminent public health threat (IPHT) based on the situation and as failing because it had less than three feet of vertical separation between the system bottom and saturated soil, as indicated by the mottling at 42 inches.[26]

19. The Rocheleaus' property is not in an SWF area, but any replacement system they install must meet the three-foot standard.[27]

20. Based on the Wickenhauser report, CCES notified the Rocheleaus by letter of December 17, 2001, that their system was an IPHT and ordered the Rocheleaus to replace it with an up-to-date ISTS within ten months.[28]

21. The Rocheleaus had no objection to replacing the system and hired Bob Koch of Koch's Soil Testing to design a new ISTS. He visited the site on August 14, 2002, and dug two 60 inch borings. He found mottling at 48 inches and measured a slope of 7.0 percent and a percolation rate of 33.6 min/in. Those parameters allowed

him to suggest a shallow trench system design with an estimated cost of $5,000-6,000.[29]

22. The Rocheleaus sent Koch's August 21, 2002, design report to CCES. West returned to the property on August 27, 2002, did one soil boring and examined the existing ones, made a slope determination of 4-5 percent,[30] and observed mottling at 40-42 inches.[31] Accordingly, CCES rejected Koch's ISTS design based upon differing results as to mottling depth and required the installation of an at-grade or above-ground system. The Rocheleaus researched the cost of such systems and found them to be in the price range of $10,000-12,000. Due to the substantial price difference based upon the small difference between whether the seasonally saturated layer was at 42 or 48 inches, the Rocheleaus sought more definitive answers on the mottling depth. Koch suggested they contact the HRUA.[32]

23. The HRUA is a water quality cooperative under Minn. Stat. § 115.58, subd. 1. It has authority under MPCA State Disposal System Permit No. 0064254 to plan, construct, and operate ISTS systems for its members. The University of Minnesota created HRUA in 1998, to perform research funded by the University. In 2002, Robert Sykes, HRUA's Principal Investigator, desired more sponsored research and helped create an Office of Sponsored Projects Administration within HRUA.

24. Mr. Rocheleau contacted the HRUA's General Manager Paul Jacobs to see if the HRUA would research the mottling depth on the property. Eventually HRUA agreed to do so. The work was performed under a HRUA project entitled "Development of On-Site Wastewater System Evaluation Method", which sought to "[d]evelop a procedure for determining the type of data to be collected at a site needed to determine the potential of high groundwater table at a site and the ability to mitigate high water table conditions."[33] The HRUA team for the site included John Nieber, Ph.D.,[34] Ronnie Daanen,[35] and Dan Wheeler.[36]

25. Daanen evaluated the Rocheleau site on September 27, 2002. In preparation for the site observation, Daanen viewed topographical and soils maps of the area, created a mental image of the site, predicted the possible vegetation on the site, and identified the hydrological properties of the soils on the site.[37] The soils map showed both Lester[38] and Le Sueur[39] soils to be present on the relevant area of the site, with the demarcation line just west of the house.[40] During his observation, Daanen took multiple soil borings at depths of 48, 80, and 172 inches, all of which were dry. Daanen installed piezometers[41] in each of the borings in an attempt to detect the existence of saturated soil. Daanen performed weak acid tests on the soil samples containing mottling to detect whether the color differences were due to the presence of calcium carbonates or to a reduced chemical environment/redoximorphic features. The acid tests produced effervescence (fizzing) in four of the five tested holes, indicating the presence of calcium carbonates.

26. Daanen returned to the site on October 12, 2002, and observed that the soil in the piezometer holes at depths of 48, 80, and 172 inches was still dry.[42] At some point, he and Dr. Nieber began to hypothesize that the seasonally saturated layer

was no longer at the 42 to 48 inch level indicated by the redoximorphic features, but was now at some lower level.

27. On October 17, 2002, at the request of Dr. Nieber and Daanen, HRUA team member Dan Wheeler visited the Rocheleau site to add his opinion as to the depth of the seasonally high water table. Also present were West, Jacobs, Daanen, Mr. Rocheleau, and others. Wheeler bored a hole to a depth of 40-50 inches about feet west of the house. Using an inclinometer, he measured the slope of the ground over his hole to be three percent over a 15-foot length. He examined the soil from the hole and determined it to be very close to a Le Sueur type soil and poorly to moderately drained. He found "common," (meaning 2-20 percent) medium distinct redox depletions and medium distinct redox concentrations (redoximorphic features) at 40-50 inches. He did numerous "acid tests" on the redoximorphic features to determine if the mottling was due to calcium carbonate and determined that it was not. He concluded that "the depth to seasonal high water table at this site was observed at 40" from the soil surface due to the distinct redox concentrations and depletions." He also concluded that the site probably perched water in the soil at that depth during the spring of the year causing the redoximorphic features. Such a perched water table might not be present in October at the end of the growing season when evapo-transpiration through the surrounding vegetation would deplete the water. Thus, Wheeler concluded that the lack of water in the test holes at the time was not conclusive on the issue.[43]

28. During discussions at the site on October 17, 2002, Jacobs, and perhaps Mr. Rocheleau, requested an extension of the already passed upgrade date to submit another compliance inspection. They also asked West for permission to cap the existing tile line. West responded in writing October 18, 2002. CCES allowed the Rocheleaus and HRUA until October 31, 2002, to submit another inspection form. Because there was no evidence of an existing drainfield, CCES concluded that capping the tile line would exacerbate the IPHT situation and refused to allow the capping until the existence of a drainfield had been verified. The letter also stated that any restoration would require a restoration design by an ISTS designer, approval by CCES, and permits.[44]

29. Within a few days of receiving the letter, and after discussions with HRUA team members, Mr. Rocheleau decided to cut the tile line in a way to disconnect the portion draining the field to the west from the system and thus avoid the classification as an IPHT. He hired a drainage contractor who apparently did the job during the last week of October, 2002. He used a backhoe to dig a trench about 15 feet from the west line of the property, found the line, removed some of it, and put a cap over the end of the line going toward Smith Lake. At some point, Jacobs and HRUA counsel wrote the County Attorney about using the draintile in lieu of a drainfield. However, Mr. Rocheleau and the HRUA did not obtain the approval and permit for the modification of the system as required by the ISTS Ordinance. The trench was left open for later examination.[45]

30. Daanen's observations of the trench and the exposed tile line revealed live ¼ inch tree roots as far as six feet beneath the surface, dry soil, and mottling at 36 to 63 inches.[46]

31. At the HRUA's suggestion, the Rocheleaus retained Brian Van Beusekom of Ingleside Engineering to redetermine their system's classifications and evaluate the location of the water table near the tile line.[47] Van Beusekom visited the site on October 30, 2001, just "days" after the trench had been dug. The trench was dry and the exposed tile line revealed soil and not rock immediately adjacent to it. He observed the last section of the portion going toward the house to be packed with soil and concluded that all the sewage tank effluent was being absorbed by the soil. Van Beusekom determined the bottom of the tile line to be four and one-half feet below the surface. He bored a 15 foot hole. It was dry to the bottom. He observed mottling at 42-48 inches.[48]

32. Van Beusekom completed a Compliance Inspection Form on October 30, 2002. He described the system components as the tank and 125 feet of the concrete tiles, "open jointed." In other words, he supported the HRUA position and considered the 125 feet of tile line on the Rocheleau property to now be the distribution medium, or drainfield, and no longer draintile. He reported his findings that there was no discharge of sewage to the ground surface, draintile, or surface waters; no sewage backup into the dwelling, and no situation with the potential to immediately and adversely impact or threaten public health or safety and, thus, that the system did not pose an IPHT. Acknowledging the different opinions as to the depth to saturated soil, Van Beusekom adopted the "shallow" view (42 inches) and concluded that the system was failing because of the lack of three feet of vertical separation between the system bottom and saturated soil.[49]

33. As a further precautionary measure, Van Beusekom provided the materials for a float and alarm system that was installed. The float indicates the level sewage and the alarm sounds if sewage builds to a certain level. Thus, the Rocheleaus can monitor the situation and have the tank pumped before it backs up into the house.[50] To date, the system has not backed up.

34. By letter of November 1, 2002, to the Rocheleaus, CCES noted Van Beusekom's finding that the system was failing based on less than three feet of vertical separation. But CCES disagreed with the determination that the severed 125 feet of the tile line could now used as the drainfield for the system. Based on that, CCES determined that there was still discharge of sewage to a draintile and that the system had the potential to immediately and adversely impact or threaten the public health. Therefore, CCES determined that the system was still an IPHT. CCES required the Rocheleaus to submit a new septic system design by November 15, 2002. It also notified them of their appeal options.[51]

35. The ISTS Ordinance provides two levels of administrative appeal. Section 13.02 permits a person to appeal a CCES decision by requesting an "Administrative Hearing," which is conducted within CCES. Section 13.03 permits a person to appeal

the decision following the Administrative Hearing by requesting a "Formal Hearing" before the County Board. The County Board may appoint a hearing examiner to conduct the Formal Hearing and submit findings, conclusions, and recommendations to the County Board, which makes the final decision.

36. On November 14, 2002, Dr. Nieber submitted a report to the HRUA evaluating the IPHT classification of the Rocheleaus' system for the purpose providing a basis for appeal of that determination. Dr. Nieber determined that since the drainline had been cut and capped, the alarm system installed, and the tank manhole had been raised to facilitate pumping, the system was no longer an IPHT. He stated that as long as the limited capacity was not exceeded, "the system should be acceptable for disposal of septage into the near future, or at least until next Spring/Summer." He stated that the system should be replaced with a modern ISTS to be designed after further testing determined whether the redoximorphic features indicated the current saturated soil level or were archaic. He suggested that this type of research and design were, "part of the design and management concept built into the initial SDS Area Wide Permit issued by MPCA to HRUA."[52]

37. On November 15, 2002, the Rocheleaus requested a Section 13.02 Administrative Hearing.[53] The Section 13.02 Administrative Hearing was held on December 10, 2002, before Joseph Enfield, Assistant Director of CCES, acting as Administrative Hearing Officer. He issued Findings of Fact, Conclusions of Law and Order on February 14, 2003, generally affirming CCES' original determination, but styling it as an order denying a variance request and requiring installation of a new ISTS.[54]

38. On February 25, 2003, the Rocheleaus filed an appeal requesting a Section 13.03 Formal Hearing. Carver County contacted the Office of Administrative Hearings for the appointment of an Administrative Law Judge as permitted by Minn. Stat. § 14.55. On March 20, 2003, CCES issued a Notice and Order for Hearing setting the hearing for April 7, 2003.[55]

39. On March 14, 2003, Dr. Nieber and Daanen submitted a detailed report on the Rocheleau site to the HRUA entitled "Septic System Compliance Analysis for Saturated Zone and Seasonally Saturated Layer."[56] The report, as well as Dr. Nieber and Daanen's testimony at the hearing, pointed out the following site characteristics and interpretations:

> Redoximorphic features at 42 inches.
>
> All holes drilled at the site remained dry throughout the observation period, which was an extremely wet time.
>
> An upslope wetland nearby has been drained, "hypothetically" lowering the water table at the site.
>
> No evidence of materials or soil layering significant enough to support a perched water table.

> Live tree roots found at a depth of 80 inches and in and around the septic system indicate dry conditions since any prolonged wet period would cause the roots to die back.
>
> Lester series soil, one of the types of soil near the system site, can contain relict redoximorphic features.
>
> The slope is 6-10 percent around the system site, which is more typical of well-drained Lester series soil than poorly-drained Le Sueur series soil.
>
> Any water perching on a layer of soil near the site would likely drain away given the overall slope of the area.
>
> The basement of the only gets water after a heavy and lengthy rainfall, the water remains for only a few days, and it enters only at the north and east sides of the basement. Dr. Nieber and Daanen are of the opinion that the consistent presence of a water table at 42-48 inches around the house would cause the basement, 6.5 feet below the surface, to have standing water for the same period.

The report concluded that unsaturated zone at the site extended down at least seven feet in the areas near the large, live trees, "quite possibly" 14 feet or more near the 15 foot bore hole, and was at least nine feet deep.

40. In his testimony, Dr. Nieber again noted that other than the redoximorphic features, they found no evidence of a water table within 15 feet of the surface. Dr. Nieber concluded that the mottling was a relict redoximorphic feature possibly due to the presence of a higher water table at the site when a depression about 800 feet north of the Rocheleaus' house was a wetland filled with water. The depression is in a small area of Glencoe series soil. Aerial photos show the "Glencoe wetland" to be visible in the early-80's and again in the early-90's, but not there since 1995.[57] A tile line installed to drain the depression was repaired in about 1993 and another was installed in about 1996.[58] Dr. Nieber's opinion is that draining the Glencoe wetland quite possibly diverted water that would have flowed toward the Rocheleau property and lowered the water table there.[59]

41. Daanen also concluded that the lack of water in the test holes indicated that the depth of the unsaturated soil was at least 15 feet. Daanen provided three possible explanations as to why the redoximorphic features at 42-48 inches did not indicate the current seasonally saturated layer. He suggested that they could be false mottling, in large part due to the results of the acid tests he performed at the site indicating the presence of calcium carbonates. He also testified that they could be relict redoximorphic features in soil that was once in the saturated zone, but that over time had shifted and moved above the water table. In rebuttal testimony, he stated that the redoximorphic features might also have been formed by rain water standing in the top porous layer of soil for a sufficient time. He also testified that because of the general slope of the land to the south to a low area across the road, the subsurface water would

also drain off to the south, so it would be impossible for the water table to rise to that depth in that area. Daanen also considered that high water tables are generally not found in Lester soils, what he found to be the dominant soil type west of the house where the existing system is located.[60]

42. Van Beusekom updated his initial report on March 17, 2003, based upon Dr. Nieber's report. His initial determination of the system as failing had been based upon the presence of redoximorphic features at 42-48 inches, but Dr. Nieber's report led Van Beusekom to see the necessity of considering "other information" per Minn. R. 7080.0020, subp. 29a. He agreed with Dr. Nieber's assessment and reclassified the system as "compliant". He also agreed with Dr. Nieber that the system needed to be updated in the near future with a drainfield closer to the surface to enhance the level of soil treatment.[61]

43. On April 2, 2003, the HRUA filed a Petition to Intervene as a party. HRUA had just approved the Rocheleaus as members and had obtained a power of attorney from the Rocheleaus to act on their behalf with regard to their ISTS. During a telephone conference on April 4, 2004, the Administrative Law Judge granted HRUA party status to appear in this matter in addition to the Rocheleaus, not in their place.

44. At the hearing, CCES withdrew its claim that the system remained an IPHT after the drainline was severed.

CONCLUSIONS OF LAW

1. The Carver County Board and Administrative Law Judge have authority to consider and rule on the issues in matter pursuant to the ISTS Ordinance and Minn. Stat. § 14.55.

2. CCES gave proper and timely notice of the hearing in this matter and has complied with all substantive and procedural requirements of law and rule.

3. It is CCES's burden to demonstrate the facts at issue by a preponderance of the evidence.

4. The redoximorphic features 42 inches below the surface of the ground at the site of the Rocheleaus' septic system, along with the other information presented, demonstrate the presence of seasonally saturated soil at that level at the site.

5. The Rocheleaus' septic system is "failing" under the ISTS Ordinance, Section VIII, and Minn. R. 7080.0060, subp. 3 B. 2. because the bottom of the system is less than two feet above the level of seasonally saturated soil at the site.

6. The depth of the seasonally saturated soil at the site not is sufficient to allow a shallow trench system (bottom at 12 inches or less) to be installed at the site.

7. The validity of any portion of the ISTS Ordinance or Minn. Rule Chapter 7080 cannot not be addressed as the Rocheleaus and the HRUA have requested

because the issue was not raised until the Reply Brief, which is too late, and neither an ALJ nor the Carver County board can declare a properly adopted rule invalid. Nothing in this determination affects the ability of the Rocheleaus or the HRUA to seek court review of the validity of the ordinance or the rule by appeal of the final decision in this matter or other appropriate court action.

Based upon the foregoing Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

IT IS RESPECTFULLY RECOMMENDED: That the Findings of Fact, Conclusions of Law and Order issued by Assistant CCES Director on February 14, 2003, be affirmed.

Dated: August 5, 2003

__/s/ Steve M. Mihalchick___
STEVE M. MIHALCHICK
Administrative Law Judge

Reported: Tape recorded (9 tapes). Partial transcript prepared.

MEMORANDUM

Four experts presented results of investigations and their opinions in this matter: Nieber, Daanen, West, and Wheeler. All were very knowledgeable in the sciences involved in ISTSs, namely, soil science and hydrology, and all were very credible. To West and Wheeler, the redoximorphic features, soils, slopes, vegetation, history, and other information including the lack of water in the soil in recent months, indicate that the redoximorphic features are at the level of the seasonally saturated soil. To Dr. Nieber and Daanen, the lack of water in the soil in recent month indicates a much lower level of the seasonally saturated soil and they have postulated some theories as to why the redoximorphic features exist at 42 inches.

The greater weight of the evidence is that the seasonally saturated layer is at the 42 inch level of the redoximorphic features. Minn. R. 7080.0020, subp. 29a, makes redoximorphic features the primary indicator of saturated soil because that is what the current research indicates. There are certainly unanswered questions about redoximorphic features, such as little research demonstrating how long they take to form or how long they last, but the research is continuing. The lack of water recently at the Rocheleau site down at least 15 feet raises questions, but is too short term to overcome the presumption created by the redoximorphic features. The possible

explanations offered by Nieber and Daanen are only possibilities and have some weaknesses. The draining of the Glencoe wetland is recent and may be temporary and there is no great likelihood that it lowered the water table at the Rocheleau site because the slope of the surface may not necessarily indicate the direction of subsurface water flow in a particular area. The tree roots found several feet deep are largely from trees that exist in wetlands, although there are also pine trees in the area that don't. The particular soils that exist at the site may not have all the characteristics normally associated with that soil type.

Ultimately, the statutes, rules, and ordinances make CCES responsible for determining whether an ISTS meets requirements. CCES has demonstrated that it made the correct determinations in this case.

SMM

---

[1] ISTS Ordinance, Section I. The ALJ added a copy of the ISTS Ordinance to the record as Exhibit (Ex.) 43 after the hearing, along with copies of the CCES Hearing exhibits, Ex. 44, the appeal letter, Ex. 45, and appeal supplement, Ex. 46. All the documents had been filed prior to the hearing, but only parts of them were made exhibits during the hearing. They were added to the record for convenience and to show the procedural steps.
[2] CCES is sometimes been referred to as the Office or Department of Environmental Services or Environmental Services.
[3] ISTS Ordinance, §1.01.
[4] ISTS Ordinance, §2.02; Minn. R. 7080, subp. 1.
[5] Minn. R. 7080.0020, subp. 49b.
[6] Exs. 3 and 4; Testimony of Dr. John Nieber and Dan Wheeler.
[7] "Water table" is more dated verbiage than "saturated soil." The PCA has eliminated the use of the term "water table" in Minn. R. 7080 and now uses "saturated soil" to avoid confusing regulated parties who sometimes equated water table and aquifer.
[8] In 1999, the PCA proposed to remove the term "mottling" from Minn. R. 7080 because it actually means any discoloration of the soil, while "redoximorphic features" is restricted to soil discoloration due to wetness or poor drainage. Ultimately the PCA rejected the proposal and the term "mottling" remains in the rules because it is used in the more restrictive sense in the industry.
[9] Testimony of Mark Wespetal.
[10] Testimony of Ronnie Daanen. Research varies on the length of time necessary to create redoximorphic features in soils. Testimony of Mark Wespetal.
[11] Testimony of Ronnie Daanen and Brian Van Beusekom.
[12] Testimony of Dr. John Nieber, Ronnie Daanen, Mary West.
[13] "SWF" means systems constructed in shoreland or wellhead protection areas, or systems serving food, beverage and lodging establishments. Minn. R. 7080.0020, subp. 46a.
[14] ISTS Ordinance, § 3.01; Minn. R. 7080.0060, subp. 3(B).
[15] Minn. R. 7080.0020, subp. 16b.
[16] ISTS Ordinance, §§ 2.01 and 2.02; Minn. R. 7080.0020, subp. 19a; *See, also,* Ex. 1.
[17] Testimony of Robert Rocheleau; Exs. 1, 7, 16, 17, and 18.
[18] Exs. 7, 17, and 18.
[19] Testimony of Robert Rocheleau; Exs. 20 and 21.
[20] Ex. 8.
[21] PVC was not used for pipe until the late 1960's. *See*, www.ppfahome.org/tips/ and www.sewerhistory.org/articles/compon/oreaneburg/orangeburg.htm.
[22] Exs. 1 and 5; Testimony of Brian Van Beusekom.

[23] Mary West is employed as an Environmentalist II with CCES. She is a licensed professional soil scientist in Minnesota and included in a national registry of certified professional soil scientists. Ex. 12.
[24] Testimony of Mary West.
[25] Preliminary Hearing Brief of Appellants and Intervenor, Exhibit B.
[26] Ex. 19.
[27] ISTS Ordinance, § 3.01; Minn. R. 7080.0060, subp. 3B.
[28] Testimony of Mary West and Robert Rocheleau (Ex. 23).
[29] Testimony of Robert Rocheleau; Ex. 15.
[30] West made her slope determination using an inclinometer.
[31] Testimony of Mary West.
[32] Testimony of Robert Rocheleau; Ex. 15.
[33] Exs. 24, 25. The project included approximately 14-15 sites, including Appellants' site.
[34] Dr. Nieber has been a professor of water resources engineering and hydrology at the University of Minnesota since 1985. He is a licensed professional engineer in Minnesota and a certified professional hydrologist through the American Institute of Hydrology.
[35] Ronnie Daanen is a graduate student at the University of Minnesota slated to receive his Ph.D. in water resource science this summer (2003).
[36] Dan Wheeler is a research fellow and teaching assistant at the University of Minnesota in the area of soils and soil science relating to ISTS's and wetlands. He has completed ISTS training but has not yet completed all the design requirements. Holly Swanson and Jay Bell were part of a team working with Wheeler on field investigations.
[37] Testimony of Ronnie Daanen.
[38] Lester series soil is a well-drained soil with moderate permeability and medium to high surface run-off, and its slopes range from 5-70 percent. The water table is generally low/deep and relict redoximorphic features appear in Lester soil.
[39] LeSueur series soil is a somewhat poorly-drained soil with moderate permeability and low surface run-off, and its slopes range from 1-3 percent. The water table is generally high/shallow and relict redox features do not appear in LeSueur soil.
[40] Ex. 10.
[41] Devices that measure the level of water in a boring.
[42] Ex. 5, p. 6, Summary of Indices.
[43] Testimony of Dan Wheeler; Ex. 1 at 9 (Wheeler and Bell Brief Synopsis).
[44] Preliminary Hearing Brief of Appellants and Intervenors, Exhibit C.
[45] Testimony of Robert Rocheleau; Ex. 23.
[46] Ex. 5, p. 6, Summary of Indices.
[47] Testimony of Robert Rocheleau; Ex. 23.
[48] Testimony of Brian Van Beusekom.
[49] Ex. 1; Testimony of Brian Van Beusekom. On March 17, 2003, Van Beusekom amended his report based upon Dr. Nieber's report that the unsaturated zone extended down at least nine feet and concluded that the system was not failing.
[50] Ex. 1.
[51] Ex. 22.
[52] Ex. 8.
[53] Ex. 44, Section 13.02 Administrative Hearing Ex. 2.
[54] Ex. 45, attached Ex. 1. The Rocheleaus had disagreed with the findings in the original decision, but had not expressly requested any variance.
[55] Ex. 45.
[56] Ex. 5.
[57] Ex. 18.
[58] Testimony of Robert Rocheleau.
[59] Testimony of Dr. John Nieber; Ex. 5.
[60] Testimony of Ronnie Daanen.
[61] Ex. 1, pp. 1-3; Testimony of Brian Van Beusekom.